

Remarks/Argument

Claims 1 to 41 are pending. Claims 7, 14 to 25, 29 and 36 to 41 have been withdrawn. In this Amendment, Claims 1 to 6, 8 to 13, 26 to 28, and 30 to 35 have been canceled. Also in this Amendment, new Claims 42 to 48 have been added.

Applicants note that the above amendments to the claims were made based on the description of the original specification, particularly, that on page 15, lines 3-8, page 15, line 2 from the bottom to page 16, line 5, page 16, lines 12-8 from the bottom, page 16, line 7 from the bottom to page 17, line 17, lines 18-21, page 18, lines 8-9, page 18, lines 13-23, page 19, lines 12-4 from the bottom, page 21, bottom line to page 22, line 1, page 23, lines 5-4 from the bottom, page 24, lines 10-14, page 26, lines 3-4, page 26, lines 8-15, and Examples 1-9.

Applicants have amended the specification in two places. First, in the specification, on page 43, bottom line, to page 44, line 5, applicants deleted the wording "vinyl laurate and". Applicants note that these amendments are believed to be obvious from the descriptions in Table 1.

Second, on page 44, lines 9-13, of the specification, applicants have removed the wording "stearyl group", and have replaced it with the wording "lauryl group, acetic acid residual group". Applicants note that these latter too are believed to be obvious from the description in Table 1.

Applicants note that the Office Action stated: that applicants' response to the restriction/election requirement filed on January 22, 2004 is acknowledged; that applicants have elected Group I, Claims 1 to 13 and 26 to 35; that applicants also elected following species: (i) for substituent - isocyanate group; and (ii) for linkage - urethane group; that Claims 7 and 29 have been withdrawn by Examiner as not readable on the elected species (non-blocked isocyanate group can not be dissolved or dispersed in water due to chemical reaction); and that Claims 7, 14 to 25, 29 and 36 to 41 have been withdrawn from further consideration, pursuant to 37 CFR 1.142(b), as being drawn to a nonelected Groups II to VII, there being no allowable generic or linking claim. In this Amendment, Applicant's Listing of the Claims reflects that Claims 7, 14 to 25, 29 and 36 to 41 have been withdrawn from further consideration at this time.

Claims 1 to 6, 8 to 10, 26 to 28, 30 to 32, 34 and 35 have been rejected under 35 U.S.C. 102(b) as being anticipated by U.S. Patent No. 5,138,006 (Cook). Applicants traverse this rejection.

The Office Action stated: that, regarding applicants' Claims 1 to 5, 9, 10, 13, 26, 27, 32 and 35, Cook discloses photocurable coating composition, comprises modified starch ester-urethanes containing residual hydroxyl groups with an ethylenically unsaturated isocyanate, capable of undergoing crosslinking reaction on exposure of UV radiation in a presence of photoinitiators and

catalysts (line 18 to 24, column 7) and ethylenically unsaturated monomers or oligomers; and that applicants should see the abstract.

In response, applicants note, first of all, that, more specifically, Cook discloses a photocurable coating composition, comprising modified starch ester-urethanes (A), solvent (B), a copolymerizable oligomer and a photoinitiator. However, Cook does not disclose the photo-curable coating composition comprising a modified starch obtained by reacting the hydroxyl group in the starch with vinyl acetate, vinyl laurate or lauric acid chloride and the radically polymerizable unsaturated group-containing compound as claimed in new Claim 43, and as claimed in new Claim 46, to say nothing of the coating compositions as claimed in new Claims 44, 45, 47 and 48.

For example, the use of vinyl acetate, vinyl laurate or lauric acid chloride as in Claim 46 can provide an effect of improving a solubility of the starch in an organic solvent effect, of improving compatibility with an other resin or curing agent when mixed, an effect of improving coating film performances such as coating film fabricating properties, and the effects of improving hydrophobic properties to the coating film and improving durability, such as, water resistance, corrosion resistance, weather resistance and the like, as disclosed on page 41, lines 11-20 in the original specification.

Also, for example, the combined use of vinyl acetate, vinyl laurate or lauric acid chloride with the radically polymerizable unsaturated group-containing

compound as in new Claim 46 makes it possible to form a cured coating film showing good properties in fabrication properties water resistance, corrosion resistance, weather resistance and the like, as disclosed on page 41, line 21 to page 42, line 3 in the original specification.

Cook discloses that composition can be used as a protective coating as stated in the Office Action, and refers to hardness and solvent resistance, but does not disclose the above particular effects as disclosed on page 41, lines 11-20, and page 41, line 21 to page 42, line 3 in the original specification.

The Office Action stated that, regarding applicants' Claims 6, 8, 28 and 30, Cook discloses that composition in powder form (see Example 6, line 57 to 61, column 9) and discloses that composition can be dissolved in organic solvents (see line 1 to 18, column 7, and claim 9). In response, applicants note that Claims 6, 8, 28 and 30 are all canceled, dependent claims.

The Office Action stated that, regarding applicants' Claims 12 and 4, Cook discloses that composition can be used as protective coating; and that applicants should see the abstract. In response, applicants note that Claims 12 and 4 are all canceled, dependent claims.

For these reasons, applicants disagree that Claims 1 to 6, 8 to 10, 26 to 28, 30 to 32, 34 and 35 are anticipated by U.S. Patent No. 5,138,006 (Cook). Thus, applicants request that this rejection under 35 U.S.C. 102(b) presently should be withdrawn.

Claims 11 and 33 have been rejected under 35 U.S.C. 103(a) as being unpatentable over Cook, as applied to Claims 1 to 6, 8 to 10, 12, 13, 26 to 28, 30 to 32, 34 and 35 above, and further in view of U.S. Patent No. 4,861,629 (Nahm). Applicants traverse this rejection.

The Office Action stated: that Cook is silent about use of colorant in modified starch based curable composition; that, however, Nahm discloses the use additives, including pigment or dyes (see lines 27 to 35, column 8), in photocurable coating composition, comprising modified cellulosic polymer reacted with at least one hydroxyl reactive isocyanate (see the abstract) and further teach the selection of additives, preferably, transparent to radiation (photo), will depend on the specific end uses contemplated for the coating; and that, therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to add colorant, as per the teaching of Nahm to the composition of Cook in order to obtain the colored protective coating for application where specific color is necessary.

In response, applicants note, again, that Cook discloses a photocurable coating composition, comprising modified starch ester-urethanes (A), solvent (B), a copolymerizable oligomer and a photoinitiator. However, Cook does not disclose the photo-curable coating composition comprising a modified starch obtained by reacting the hydroxyl group in the starch with vinyl acetate, vinyl laurate or lauric acid chloride and the radically polymerizable unsaturated group-

containing compound as claimed in new Claim 43, and as claimed in new Claim 46, to say nothing of the coating compositions as claimed in new Claims 44, 45, 47 and 48.

For example, the use of vinyl acetate, vinyl laurate or lauric acid chloride as in Claim 46 can provide an effect of improving a solubility of the starch in an organic solvent effect, of improving compatibility with an other resin or curing agent when mixed, an effect of improving coating film performances such as coating film fabricating properties, and the effects of improving hydrophobic properties to the coating film and improving durability, such as, water resistance, corrosion resistance, weather resistance and the like, as disclosed on page 41, lines 11-20 in the original specification.

Also, for example, the combined use of vinyl acetate, vinyl laurate or lauric acid chloride with the radically polymerizable unsaturated group-containing compound as in new Claim 46 makes it possible to form a cured coating film showing good properties in fabrication properties water resistance, corrosion resistance, weather resistance and the like, as disclosed on page 41, line 21 to page 42, line 3 in the original specification.

Cook discloses that composition can be used as a protective coating as stated in the Office Action, and refers to hardness and solvent resistance, but does not disclose the above particular effects as disclosed on page 41, lines 11-20, and page 41, line 21 to page 42, line 3 in the original specification.

With respect to Nahm, as above mentioned in Cook, Nahm does not disclose the photo-curable coating composition as claimed in new Claim 46, to say nothing of the coating composition as claimed in new Claims 44, 45, 47 and 48.

Nahm does refer to solvent resistance, but does not disclose the particular effects of the present invention, as above mentioned.

From the above reasons, it is believed that new claims 42-46 should be patentable over Cook and Nahm.

For these reasons, applicants disagree that Claims 11 and 33 are rendered unpatentable as obvious over Cook, as applied to Claims 1 to 6, 8 to 10, 12, 13, 26 to 28, 30 to 32, 34 and 35 above, and further in view of U.S. Patent No. 4,861,629 (Nahm). Thus, applicants request that this rejection under 35 U.S.C. 102(b).

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Applicants: Kazuhiko Ohnishi et al.
Amendment in Response to the
Office Action Dated November 16, 2006



Reconsideration, reexamination and allowance of the claims are
respectfully requested.

Respectfully submitted,

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Date

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CERTIFICATE OF MAILING

I certify that this Amendment dated February 28, 2007 is
being deposited with the United States Postal Service as first class mail
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